

### REMARKS

Applicants initially wish to thank Examiner Moran for the interview with the undersigned (Applicants' representative) and Dr. Richard Hull on August 30, 2005, in which agreement was not reached. Specifically, and in accordance with 37 CFR Section 133:

- Claims 1, 2 and 4-8 were discussed.
- The Alsberg article (*Chemometrics and Intelligent Laboratory Systems*, 1990, vol. 8, pp. 173-181), U.S. Patent No. 5,778,362 to Deerwester, and U.S. Patent No. 6,185,506 to Cramer et al. were discussed.
- The principal proposed amendment discussed was the inclusion of the term "identity matrix" in claim 1.
- Thrust of argument presented: The Alsberg article, U.S. Patent No. 5,778,362 to Deerwester, and U.S. Patent No. 6,185,506 to Cramer et al. do not disclose, inter alia, the use of an identity matrix.
- Applicants have amended the claims in accordance with the aforementioned interview.

In view of the foregoing amendments and following remarks, Applicants respectfully request the reconsideration of this application and the timely allowance of the pending claims.

Claims 4-8 are cancelled in the present amendment.

After entry of the Amendment, claims 1 and 2 are pending.

**The Objection to the Abstract**

On page 2 of the Office Action dated March 25, 2005 (hereinafter "Office Action"), the Examiner objected to the Abstract. A new Abstract is provided that is directed to the claimed subject matter. The Examiner is requested to withdraw the objection to the Abstract.

**The Objection to the Drawings**

On page 2 of the Office Action, the Examiner objected to the drawings. Replacement drawing sheets for Figures 5 and 11-13, and a complete set of formal drawings are submitted herewith. The present assignee of this application, Axontologic, Inc., wishes to publish all substantive information that was originally filed in the informal drawings. The assignment of the present application to Axontologic, Inc. has been recorded by the U.S. Patent and Trademark Office at Reel 015819, Frame 0181, and became effective March 2, 2005. The Examiner is accordingly requested to approve the replacement drawing sheets, and the formal drawings, and withdraw the objection to the drawings.

**The 35 U.S.C. §112, Second Paragraph, Rejections**

On page 4 of the Office Action, the Examiner rejected claim 1 under 35 U.S.C. §112, second paragraph, with regard to the phrase "the resultant matrices". Claim 1 has been amended to render the Examiner's rejection of claim 1 moot. Accordingly, Applicants request that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. §112, second paragraph.

On page 4 of the Office Action, the Examiner rejected claim 1 under 35 U.S.C. §112, second paragraph, with regard to the term "using". Claim 1 has been amended to render the Examiner's rejection of claim 1 moot. Accordingly, Applicants request that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. §112, second paragraph.

On pages 4-5 of the Office Action, the Examiner rejected claim 4 under 35 U.S.C. §112, second paragraph, with regard to a use of a parenthesis. Claim 4 has been cancelled. The subject matter of claim 4 has been incorporated into claim 1 in a manner that renders the

Examiner's rejection moot. Accordingly, Applicants request that the Examiner withdraw the rejection of claim 4 under 35 U.S.C. §112, second paragraph.

On page 5 of the Office Action, the Examiner rejected claim 4 under 35 U.S.C. §112, second paragraph, with regard to a use of the phrase "the eigenvectors." Claim 4 has been cancelled and incorporated into claim 1. The Examiner's helpful suggestion has been adopted in claim 1. Accordingly, the Examiner's rejection has been rendered moot.

On page 5 of the Office Action, the Examiner rejected claim 4 under 35 U.S.C. §112, second paragraph, with regard to a use of the phrase "the eigenvalues." Claim 4 has been cancelled and incorporated into claim 1. Claim 1 has been amended in a manner that renders the Examiner's rejection moot. Accordingly, Applicants request that the Examiner withdraw the rejection of claim 4 under 35 U.S.C. §112, second paragraph.

#### **The 35 U.S.C. §103(a) Rejections**

Claims 1 and 4-8 are rejected under 35 U.S.C. §103(a) as being obvious over Alsberg (*Chemometrics and Intelligent Laboratory Systems*, 1990, vol. 8, pp. 173-181) in view of U.S. Patent No. 5,778,362 to Deerwester.

Claim 2 is rejected under 35 U.S.C. §103(a) as being obvious over Alsberg in view of Deerwester, and further in view of U.S. Patent No. 6,185,506 to Cramer et al.

Claim 1 has been amended to recite, *inter alia*, the "identity matrix." As discussed during the August 30, 2005 interview with Examiner Moran, Applicants find no teaching or suggestion, let alone disclosure, in either Alsberg, Deerwester or Cramer regarding the claimed "identity matrix". Applicants believe that the Examiner acknowledged that Alsberg, Deerwester and Cramer do not teach the use of an identity matrix, particularly in combination with the other features recited in claim 1. Accordingly, Applicants believe that claim 1 and claim 2 which depends therefrom, each recite allowable subject matter.

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**Application No. 09/546,399**

**Amendment Dated: September 26, 2005**

**Reply to Office Action mailed March 25, 2005**

### **CONCLUSION**

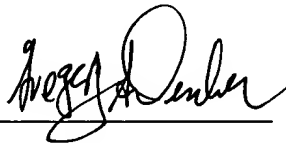
In view of the foregoing, Applicants respectfully request that the presently pending claims be passed to issue. If there are any matters that would delay this Application from passing to issue, the Examiner is requested, at her earliest convenience, to telephone the undersigned to resolve such matter(s).

### AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for this Amendment, or credit any overpayment to Deposit Account No. 08-0219.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to deposit account no. 08-0219.

Respectfully submitted,



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Date: 09/26/05

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**Amendments to the Abstract:**

~~A novel extension of the vector space model for computing chemical similarity is described. The instant method uses, for example, the singular value decomposition (SVD) of a molecule/descriptor matrix to create a low dimensional representation of the original descriptor space.~~

A novel extension of the vector space model for computing chemical similarity is described. In one embodiment, a method calculates similarity between molecules and molecular descriptors using the singular value composition (SVD) of a molecule/descriptor matrix and, for example, an identity matrix, to create a low dimensional representation of the original descriptor space. Probe or query molecules then can be projected into the low dimensional representation and compared to the molecules from the original matrix.